

IN THE CLAIMS

1. (currently amended) ~~[[A]] In carrier having a digital security image, to be arranged image~~ on or in a the carrier, ~~particularly a document, such as bonds or other documents the authenticity or origin of which is of importance, and having the impr~~
ovements of the digital security image comprising:

at least a first and second security characteristic visually almost imperceptibly incorporated in the digital security image, wherein the first security characteristic is detectably copied onto a copy when copying the carrier and the second security characteristic is not copied onto ~~said the~~ copy when copying the carrier, a resolution of the first security characteristic being higher than 100 dpi and a resolution of the second security characteristic being higher than the resolution of the first security characteristic.

2. (currently amended) The ~~digital security image~~ carrier according to claim 1, in which the resolution of the first and second security characteristics is higher than the resolving power of the human eye.

3.- 4. (canceled)

5. (currently amended) The ~~digital security image~~ carrier according to claim 1, in which the first and second security characteristics have been added to the Fourier amplitude spectrum of the original digital security image.

6. (currently amended) The ~~digital security image~~ carrier according to claim 5, in which the first security characteristic has been added to a first frequency range of the Fourier amplitude spectrum of the ~~original~~ digital security image, and a second security characteristic to a second frequency range of the Fourier spectrum of the ~~original~~ digital security image.
7. (currently amended) The ~~digital security image~~ carrier according to claim 5, in which a Fourier amplitude spectrum of the second security characteristic has been added to the Fourier amplitude spectrum of the ~~original~~ digital security image, and Fourier phase spectrum of the second security characteristic has been added to the Fourier phase spectrum of the ~~original~~ digital security image.
8. (currently amended) The ~~digital security image~~ carrier according to claim 1, in which the ~~original~~ digital security image is a colour image.
9. (currently amended) The ~~digital security image~~ carrier according to claim 8, in which the security characteristics have been incorporated in at least one colour component of the ~~original~~ digital security image.
10. (currently amended) ~~the digital security image~~ The carrier according to claim 9, in which the security characteristics have been incorporated in the same colour component.

11. (currently amended) The ~~digital security image~~ carrier according to claim 1, in which a first security characteristic has been incorporated in a frequency range of the Fourier amplitude spectrum which has a resolution of approximately 150-600 dpi in the spatial domain and a second security characteristic in a frequency range of the Fourier amplitude spectrum which has a resolution higher than the resolution of the first security characteristic in the spatial domain.

12. (currently amended) [[A]] In a carrier having a digital security image provided with at least a first and a second security characteristic at substantially the same position on or in a ~~the~~ carrier, ~~the improvements wherein~~ which the first security characteristic and the second security characteristic have a frequency that is higher than visually perceptible to the human eye, ~~in which furthermore~~ the first security characteristic in the Fourier frequency domain has a frequency that is lower than the highest of ~~the~~ print and scan resolution of copying equipment and the second security characteristic in the Fourier frequency domain has a frequency of at least twice the highest of the print and scan resolution of copying equipment.

13. (currently amended) [[A]] In a carrier having a digital security image provided with at least a first and a second security characteristic ~~on~~ at substantially the same position on or in a carrier, ~~particularly a document, in which~~ the improvements wherein the first security characteristic in the Fourier domain is in a range which has a frequency of between 150 and 400dpi, ~~preferably between 250 and 400 dpi~~ in the spatial domain, and the second security characteristic in the Fourier frequency domain is in a range which has a resolution that is higher than 400 dpi, ~~preferably higher than 800 dpi~~, in the spatial

domain.

14. (currently amended) The ~~digital security image~~ carrier according to claim 13, in which the first and second security characteristics have been incorporated in the amplitude spectrum of the Fourier frequency domain.

15. (currently amended) ~~[[A]]~~ In a carrier having a digital security image provided with a secured image, the improvements wherein ~~which~~ the amplitude spectrum of the Fourier transformed of the secured image is an addition sum of the amplitude spectrum of the Fourier transformed of the ~~original~~ digital security image, a first image having frequencies in the amplitude spectrum which have a resolution higher than 150 dpi in the spatial domain and the transformed of the amplitude spectrum of the Fourier transformed of a second image having frequencies in the amplitude spectrum which have a resolution in the spatial domain that is higher than the resolutions of the first image.

16. (currently amended) The ~~digital security image~~ carrier according to claim 15, in which the transformation is a low-pass filter followed by a transformation which converts the low frequencies into frequencies above a threshold value, the transformations being carried out in the Fourier frequency domain.

17. (original) A method for arranging security elements on a carrier, particularly a document, in which a first security characteristic with a resolution higher than 100 dpi and a second security characteristic with a resolution higher than the resolution of the first security characteristic and higher than a display device is arranged in

an original image for obtaining a security image, after which the security image is arranged on the carrier as security characteristic.

18. (currently amended) A ~~M~~method for detecting a digital security image according to claim 1 ~~17~~, in which ~~an~~ the digital security image is converted into a representation that is computer-processable, and software loaded in ~~the~~ a computer memory applies a high-pass filter operation and a diode function operation on the representation, ~~and~~ compares the result with the computer-processable representation of ~~the~~ a first security image, calculates the Fourier transformed of the representation, and compares the amplitude spectrum to ~~the~~ a second security image.

19. (currently amended) A device for detecting ~~the security characteristics~~ a digital security image in or on a carrier, ~~particularly a document, or an image on a carrier, in~~ which the device ~~has been provided with~~ comprising

a recording device for recording ~~an~~ recorded image of ~~the document or the image~~ carrier in computer-processable form,

a computer ~~connected to the recording device, and~~

means for transmitting the recorded image from the recording device to ~~a~~ the computer ~~connected to the recording device,~~

~~which~~ wherein the computer has ~~been provided with~~ a memory, software for locating the digital security image in the recorded image, a calculating unit ~~provided with~~ ~~software~~ for calculating the Fourier transformed of the digital security image in the memory, and display means for displaying an assessment of the authenticity of ~~the image~~ or the carrier, wherein the digital security image in or on the carrier comprises a first

security characteristic with a resolution higher than 100 dpi and a second security characteristic with a resolution higher than the resolution of the first security characteristic, and the software further comprises a detection unit for detecting the first security characteristic and the second security characteristic in the digital security image.

20. (currently amended) ~~A carrier~~computer-readable storage medium for holding digital data, such as a hard disk, optical disk, computer memory, holding a digital security image in a computer-processable form which, when reproduced on a carrier, comprises at least a first and second security characteristic visually almost imperceptibly incorporated in the reproduced digital security image, wherein the first security characteristic is detectably copied on a copy when copying the carrier and the second security characteristic is not copied onto said copy when copying the carrier, the first security characteristic having a resolution higher than 100 dpi and the second security characteristic having a resolution higher than the resolution of the first security characteristic.

21. (currently amended) ~~Software, suitable for arranging and detecting~~A computer-readable storage medium provided with software which, when running on a computer provided with a memory with an original digital image, instructs said computer to arrange a first and second security characteristic in a digital security image according claim 1, the original digital in order to provide a security image which, when applied onto or in a substrate, has the first security characteristic with a resolution higher than 100 dpi and the second security characteristic with a resolution higher than the resolution of the first security characteristic.

22. ~~A carrier~~computer-readable storage medium provided with software ~~for the operation of a computer, suitable for carrying out the method according to claim 1 which, when running on a computer provided with a memory with a security image which, when applied onto or in a substrate, has a first security characteristic with a resolution higher than 100 dpi and a second security characteristic with a resolution higher than the resolution of the first security characteristic, instructs the computer to detecting the first and second security characteristic in the digital security image.~~

23.- 24. (canceled)

25. (new) The carrier according to claim 6, in which a Fourier amplitude spectrum of the second security characteristic has been added to the Fourier amplitude spectrum of the digital security image, and a Fourier phase spectrum of the second security characteristic has been added to the Fourier phase spectrum of the digital security image.

26. (new) The carrier according to claim 13, in which the first security characteristic in the Fourier domain is in a range which has a frequency between 250 and 400 dpi.

27. (new) The carrier according to claim 13, in which the first security characteristic in the Fourier domain is in a range which has a frequency higher than 800 dpi.